



**GREEN
INFRASTRUCTURE:
NATURE BASED SOLUTIONS
FOR SUSTAINABLE
AND RESILIENT CITIES**

**4-7 APRIL 2017
ORVIETO, ITALY**

PALAZZO DEI CONGRESSI (PIAZZA DEL POPOLO)
WWW.GREENINURBS.COM/FINALCONFERENCE

4-7 April 2017, Orvieto, Italy

Welcome to Orvieto!



Quality of life in European cities and in most of the world is decreasing due to an increase of pollution levels, increase of heat islands, decreased biodiversity, flooding and extreme events also related to climate change. This can have detrimental effects for human health and well-being. At the same time cities are a large source of carbon and only a few attempts are underway to improve carbon sequestration at local level.

Green Infrastructure (GI) with particular focus on **Urban Forests** can contribute to the improvement of the urban environment through a number of mitigation actions. This is especially valid for the tree component of vegetation due to larger biomass and extended canopies.

The improvement of environmental and social/health conditions will lead to a long-term improvement in health conditions of populations, because of an improved urban environment (clean air, less polluting elements, less noise pollution) and better quality of life (more leisure opportunities, less stress, increasing social cohesion).

We expect people living/working in urban areas can take advantage of innovative **Nature Based Solutions (NBS)** which have GI as a main component, promoting them to other citizens and to other cities, along the lines of large investments such as the H2020 framework programme on this topic.

New models of **governance** for urban areas will also bring new ways of managing them, using new forms of rights and duties divided between owners and managers, as well as new forms of management. This can lead to decreased costs for planning and management and better efficiency of areas, which can contribute to economic growth.

The main objective of the Conference is to show how a trans-disciplinary approach to **urban planning** based on GI as NBS will enable maximization **Ecosystem Services** provision making future cities more **resilient** and **sustainable**.

The Conference will bring together urban foresters, landscape architects, arborists, plant physiologists, ecologists, economists, epidemiologists, sociologists, students, urban planners and managers and enable different communities such as researchers and academics, practitioners, policy makers, administrators, and the private sector to exchange knowledge and insights.

Carlo Calfapietra, Chair of the Conference and of the COST Action FP1204 “GreeninUrbs”

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Scientific Sessions

1 - Implications of GI on air quality

2 - GI for water and soil management and remediation

3 - GI for climate regulation and climate change resilience

4 - Biodiversity and ecological implications of GI

5 - Health focused GI – enabling healthy and active lives

6 - Engaging communities and partners to participate in the co-production of GI

7 - New governance and funding models for GI

8 - Science-policy implications of GI

9 - Economic impact of GI for resilient and sustainable cities

10 - GI in future urban planning

11 - Assessing and mapping Ecosystem Services generated by urban GI

12 - Sustainable management of GI

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Map of the Conference



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4 April
Tuesday

- 08:30 – 10:00 Registration and Coffee
09:00 – 10:00 MC meeting COST Action FP1204 GreenInUrbs
- 10:00 – 12:50 PLENARY SESSION – Sala dei Quattrocento**
10:00 – 10:45 **Welcome and introduction to the conference**
Carlo Calfapietra, Chair of the Conference and of COST Action FP1204 **GreenInUrbs**
Catuscia Marini, President of Regione Umbria
Giuseppe Germani, Mayor of Orvieto
Enrico Brugnoli, Director of Department of Earth System Science and Environmental Technologies of National Research Council (CNR)
Federica Ortelli, Officer COST, Brussels
Massimiliano Atelli, President of the Committee for the Public Green Areas of the Italian Ministry of Environment
- 10:45 – 11:30 **GreenInUrbs WG Leaders**
Roeland Samson, WG1, Environmental services of GI and UF and implications of climate change
Liz O’Brien, WG2, Social/cultural services of GI and UF
Silvija Krajter, WG3, Governance of UF in a GI approach
David Pearlmutter, Vice-Chair COST Action FP1204 GreenInUrbs, Presentation of the Book “The Urban Forest, Cultivating Green Infrastructure for People and the Environment”. Springer
- 11:30 – 11:50 **KEYNOTE: Christos Fragakis, DG Research & Innovation, Deputy Head Unit I.3, EU, EU H2020: Promoting innovation with Nature to address societal challenges and enhance sustainability and resilience**
- 11:50 – 12:10 **KEYNOTE: Julie Raynal, DG Environment, EU Strategy on Green Infrastructure, The Green Infrastructure Strategy of the European Commission**
- 12:10 – 12:30 **KEYNOTE: Paola Clerici Maestosi, ENEA, Vice-Chair JPI Urban Europe, Green Infrastructure: when Joint Programming Initiative promotes and funds nature based solutions for sustainable and resilient cities**
- 12:30 – 12:50 **KEYNOTE: Holger Robrecht, Deputy Director ICLEI Europe, They pave paradise... (How) Can cities turn green again?**
- 12:50 – 14:00 Lunch
- 14:00 – 18:00 PARALLEL SESSIONS**
- SESSION 5 Health focused GI – enabling healthy and active lives**
Sala dei Quattrocento
CHAIR: Payam Dadvand, IsGlobal Barcelona Institute for Global Health
- 14:00 – 14:30 **KEYNOTE: Terry Hartig, Uppsala University, EU-NBS Expert Group The science of restorative experience: Understanding a general pathway for health benefits of natural environments**
- 14:30 – 14:45 *Nearby green space and human health*, E. Dinand Ekkel et al.

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- 14:45 – 15:00 *Development of green infrastructure and quality of urban life: a case study*, A. Szczepańska et al.
- 15:00 – 15:15 *Nearby nature and mental health: green and blue space as possible substitutes*, S. De Vries et al.
- 15:15 – 15:30 *How eye-catching are natural features when walking through a park? Eye-tracking responses to videos of walks*, M. Amati et al.
- 15:30 – 15:45 *Healthy benefits of UGI – does diversity matter? Biocultural diversity of European urban parks*, K. Vierikko et al.
- 15:45 – 16:00 *A systematic review of the evidence on the association between green spaces and cognition*, C. de Keijzer et al.
- 16:00 – 16:30 **Coffee Break**
- 16:30 -16:45 *Lifelong exposure to green space and attentional development: a prospective birth cohort study*, P. Dadvand et al.
- 16:45 -17:00 *Relationship of green areas and visitor's health in two municipalities of the city of Belgrade*, J. Tomićević-Dubljević et al.
- 17:00- 17:15 *Green infrastructure in peri-urban areas: The importance of urban dwellers' sense of place for recreational use of peri-urban areas*, V. Zender
- 17:15- 17:30 *#DokterBos #DoctorWood - a Social Media campaign to raise awareness on the impact of nature, forest and green on public health and well-being (Flanders, Belgium)*, R. De Vreese
- 17:30- 17:45 *Movement patterns through urban green space – implications for planning, design and management of NBS*, A. O. Sang et al.
- 17:45- 18:00 *Combined effects of air pollution and allergens in the city of Rome*, A. Di Menno di Bucchianico et al.

SESSION 8 –Science-policy implications of GI
Sala Etrusca

CHAIR: Eva Muller, Director Forest Economics, Policy and Products Division, FAO

- 14:00 – 14:15 *Urban green infrastructure: aims and perspectives from the perspective of urban nature conservation in Germany*, A. Schröder
- 14:15 – 14:30 *Supporting urban climate change adaptation using green infrastructure: the case of Czech Republic*, E. K. Lorencová et al.
- 14:30 – 14:45 *Green Roofs as Smart Sustainable and Economic Solution*, M. Köhler
- 14:45 – 15:00 *Developing urban green infrastructure strategies along a double helix of research and practice – Insights from two research projects*, S. Pauleit et al.
- 15:00 – 15:15 *A review of policies and tools for implementing sustainable urban drainage systems in urban planning*, V. Pappalardo et al.
- 15:15 – 15:30 *Bridging biodiversity conservation objectives with landscape planning through Green Infrastructures: A case study from Sardinia, Italy*, S. Lai et al.
- 15:30 – 15:45 *A green infrastructure in the Metropolitan City of Cagliari: ecological corridors as connections between Natura 2000 sites*, I. Cannas et al.
- 15:45 – 16:00 *The “Zero Pesticide” objective for cities of Paris Region*, J. Flandin
- 16:00 – 16:30 **Coffee Break**

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- 16:30- 17:00 **KEYNOTE: Allan Watt, University of Edinburgh, Coordinator of H2020-EKLIPSE,**
Towards an improved science-policy-society interface for Green Infrastructure,
- 17:00 -17:15 *The nature-base solutions and green infrastructure at landscape scale – searching for territorial resilience. Application to Portugal, S. B. Pena et al.*
- 17:15 -17:30 *Green Infrastructure and regulating ecosystem services. A case study concerning the Metropolitan City of Cagliari and the Natura 2000 network, D. Ruggeri et al.*
- 17:30 -17:45 *Urban and periurban forest related research in Mediterranean: A systematic review, S. Krajter Ostoić et al.*
- 17:45 -18:00 *The metabolism of political and scientific concepts aiming to promote and govern green urban infrastructures, J. Alkan Olsson et al.*

SESSION 12 Sustainable management of GI
Sala del Governatore

CHAIR: Marcus Collier, University College Dublin, Coordinator of H2020-CONNECTING

- 14:00 – 14:15 *Growing the Urban Forest resource: the art and science of planting a tree, N. Zürcher*
- 14:15 – 14:30 *Drought and flood resilience in an existing urban forest, P. Handley*
- 14:30 – 14:45 *A case study showing the application of modern urban forestry principles and thinking in the preparation of an urban tree strategy, B. Crane*
- 14:45 – 15:00 *Is the management of Britain’s urban forests really sustainable? Time to take an ecosystem services approach, H. Davies et al.*
- 15:00 – 15:15 *Ecosystems services provided by small urban green infrastructures – case study Bucharest, M. R. Nita et al.*
- 15:15 – 15:30 *Monitoring of GI-management based on maintenance-logics, B. Persson*
- 15:30 – 15:45 *Spatial indicators for smart urban green spaces management, P. Semenzato et al.*
- 15:45 – 16:00 *Sustainable management of green infrastructure: state of the art in 116 major Italian cities, A. Chiesura et al.*
- 16:00 – 16:30 **Coffee Break**
- 16:30 -17:00 **KEYNOTE: Francesco Ferrini, President Agronomy School, University of Florence,**
Green Infrastructures: a sustainable management approach
- 17:00 -17:15 *When Inonotus rickii meets Celtis australis: a constraint on the use of hackberry trees in Lisbon, A. P. Ramos et al.*
- 17:15 -17:30 *The impacts of waterproof surfaces in trees, L. M. Martins*
- 17:30 -17:45 *State of Swedish public parks - the basis for future developments, T. B. Randrup et al.*
- 17:45- 18:00 *Health village of Saracinesco, R. Fagioli*
- 18:00-20:00 WINE TASTING offered by Cantina La CARRAIA (PALAZZO DEI CONGRESSI, Open to All Conference Participants)**

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5 April
Wednesday

09:00 -18:30 PARALLEL SESSIONS

SESSION 7 New governance and funding models for GI
Sala dei Quattrocento

CHAIR Stefania Giannuzzi, Deputy Mayor for Environment, Comune di Torino

- 09:00- 09:30 **KEYNOTE: Cecil C. Konijnendijk, University of British Columbia, Coordinator of FP7-GREENSURGE, *Managing an urban forest of opinions – new governance models for green infrastructure***
- 09:30 -09:45 *The impact of economic growth oriented development policies on green infrastructure efforts in Turkey, E. Atmis et al.*
- 09:45 -10:00 *The FAO Guidelines on UPF: a first step towards a greener, healthier and happier cities, S. Borelli et al.*
- 10:00 -10:15 *Governance tools to enable implementation of nature-based solutions, S.K.H. Janssen et al.*
- 10:15 -10:30 *Spontaneous natural redevelopment of urban voids in small cities: planning challenges from transient woodlands, T. Campagnaro et al.*
- 10:30 -10:45 *Strategic analysis of Urban Forests, A. Bernasconi et al.*
- 10:45 -11:00 *Light shades of green: potential governance implications of the European Green Capital Award, N.M. Gulsrud et al.*
- 11:00 -11:30 **Coffee Break**

SESSION 9 –Economic impact of GI for resilient and sustainable cities
Sala Esposizione

CHAIR: Vera Enzi, Spokeswoman EFB

- 09:00 -09:30 **KEYNOTE: Luise Noring, Copenhagen Business School, EU-NBS Expert Group, *New governance and finance models for urban regeneration,***
- 09:30 -09:45 *Economic valuation of Urban and Peri-Urban Forests Recent trends and evidence from Europe, M. B. Andreucci*
- 09:45-10:00 *Economic evaluation of green roofs installation in buildings, C. Matos Silva et al.*
- 10:00-10:15 *The influence of Urban Green Spaces in local economy: Lisbon (Portugal) as a case study, F. Grilo et al.*
- 10:15-10:30 *Translating greenhouse gas and energy savings in to saving money at NYC department of transportation, J. Wurwarg et al.*
- 10:30-10:45 *Comparing the costs of grey and green infrastructure in Paris region, M. Barra et al.*
- 10:45-11:00 *A flexible multi-scale system dynamics modelling framework to assess the socio-economic impact of urban GI, J. Babí Almenar et al.*
- 11:00 -11:30 **Coffee Break**

SESSION 3 GI for climate regulation and climate change resilience
Sala Etrusca

CHAIR: Gemma Garcia, Tecnalía, Innovation Deputy Manager of H2020-GrowGreen

- 09:00- 09:15 *Hydraulic behaviour of expanded cork agglomerate in green walls and living facades, C.P. Rodrigues et al.*

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- 09:15 -09:30 *Qualification of carbon stocks based on imperviousness of urban areas: a case study from Istanbul, P. Pamukcu-Albers et al.*
- 09:30 -09:45 *Assessment and mapping of climate regulation ecosystem service in Bulgaria, M. Zhiyanski et al.*
- 09:45 -10:00 *Urban green infrastructure as a tool for mitigating the urban heat island – a review of research methodologies, H Saaroni et al.*
- 10:00 -10:15 *The role of green infrastructure on urban climate – insights from the Copernicus Climate Change Service, J. H. Amorim et al.*
- 10:15 -10:30 *Urban vegetation as carbon reducing ecosystem service in Helsinki, L. Järvi et al.*
- 10:30 -10:45 *Green walls to control microclimate inside buildings, E. Schettini et al.*
- 10:45 -11:00 *Mapping and classifying green infrastructure typologies for climate-related studies based on airborne remote sensing data, C. Bartesaghi Koc et al.*
- 11:00 -11:30 **Coffee Break**
- 11:30-11:45 *Planning for cooler cities: A framework to prioritise urban green infrastructure, N. S. G. Williams et al.*
- 11:45-12:00 *Quantifying the microclimatic effects of urban green infrastructure for climate change mitigation and adaptation, T. Zölch et al.*
- 12:00-12:15 *Mapping the spatial distribution of the nocturnal cooling service provided by a city's greenspaces under a temperate climate, M. V. Monteiro et al.*
- 12:15-12:30 *Assessment of the microclimatic impacts of urban green infrastructure based on local climate zone classifications, P. Pakzad et al.*
- 12:30-12:45 *Estimating the cooling capacity of different types of GUI in cities, L. Zardo et al.*
- 12:45-13:00 *Selection of green roof substrates and plants to maximise the green roof thermal performance in South-East Australia, A. Pianella et al.*
- 13:00 -14:00 **Lunch**
- 14:00 -14:15 *REBUS® training programme and 'Rigenerare la città con la natura' toolkit -Designing public spaces for climate mitigation and adaptation, L. Ravanello et al.*
- 14:15- 14:30 *Ecourbanism – where ecosystem services and culture combine, L. Engleback*
- 14:30 -14:45 *Assessment of the role of green infrastructure in the city of Bolzano (Italy) with WRF/SLUCM model simulations, G. Pappacogli et al.*
- 14:45 -15:00 *The microclimatic effect of Green Infrastructure (GI) in a Mediterranean city: the case of urban park of Ciudadela (Barcelona, Spain), M. Moreno García*
- 15:00 -15:15 *Urban trees - cooling down the heat island: Do species matter?, A. Brähler et al.*
- 15:15 -15:30 *Summer surface temperatures of residential buildings in the city of Parma: the effect of imperviousness in different urban areas, M. Morabito et al.*
- 15:30 -15:45 *Evaluating heat stresses on marathon runners and spectators in Tokyo 2020 Olympic Games, E. Kosaka et al.*
- 15:45 -16:00 *Evaporative cooling by urban forests: quantifying and valuing this ecosystem for three UK cities, J. Moss et al.*
- 16:00 -16:30 **Coffee Break**
- 16:30 -17:00 **KEYNOTE: Francisco Escobedo, Universidad del Rosario, Green Infrastructure and climate change resilience- accounting for context and community needs**
- 17:00 -17:15 *Suitability of urban morphology types for Urban Green Infrastructure, R. Privitera et al.*
- 17:15 -17:30 *Evaluation of heat-flux parameters of green roof models in Mediterranean climatic conditions, R. Di Bonito et al.*

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- 17:30 -17:45 *Numerical study on the cooling effect of vertical greening in a high-density city: case study of Hong Kong*, T. E. Morakinyo et al.
- 17:45 -18:00 *Experimental methods for the estimation of green roof evapotranspiration*, R. Claverie et al.
- 18:00 -18:15 *Offsetting carbon emission: estimating the contribution of urban green infrastructure in major Chinese cities*, W. Y. Chen
- 18:15 -18:30 *How effective are our urban trees in reducing urban heat?* M. A. Rahman et al.

SESSION 10 GI in future urban planning

Sala del Governatore

CHAIR: Tom Armour, Director, ARUP

- 09:00 -09:15 *Greenprint For Cities – Delivering Green Infrastructure*, T. Armour
- 09:15 -09:30 *Botanical city-the urban desert turned into an oasis- Habitat and Urban Greening Processes / Models / Strategies / Tools / Landscaping*, A. H. Benassi
- 09:30 -09:45 *The City that feels and functions like the wood*, A. Busse-Nielsen
- 09:45 -10:00 *Small-scale green infrastructures: a literary review of the future of urban green spaces design*, D. Grohmann, et al.
- 10:00 -10:15 *Four perspectives on the future of nature in European cities*, H. Farjon et al.
- 10:15 -10:30 *Re-thinking the peri-urban Realm. Soils, Land Uses, Landscape Connectivity*, A. Palazzo et al.
- 10:30 -10:45 *Is land well-taken? Linkage between urban green spaces and new built-up areas*, A. Tomao et al.
- 10:45 -11:00 *GREEN URBAN REGENERATION. The application of the “B.A.F.MO” index for the improvement of environmental and ecological quality in an industrial area of Mode*, A. Di Paolo
- 11:00 -11:30 **Coffee Break**
- 11:30-11:45 *Creating the edges- a landscape context of green infrastructure in an urban boundary*, B. Bożętko
- 11:45-12:00 *Landscape strategies for the implementation of a green network in the cityscape: a concept for the design of the open spaces of the Alma Mater University (Italy)*, E. Maino et al.
- 12:00-12:15 *‘Sii The Future’ - The practitioner’s evolving role in ensuring effective delivery of sustainable, integrated green infrastructure in the built environment*, M. Gammie
- 12:15-12:30 *Green infrastructure experiences from Italian context. A network analysis approach*, A. Ganciu et al.
- 12:30-12:45 *Green planning models and future cities: principles for re-naturing cities*, F. Lemes De Oliveira
- 12:45-13:00 *NBS-BMPs planning for urban runoff control: a study case in a peri urban area in the metropolitan city of Rome (Italy)*, F. Recanatesi et al.
- 13:00 -14:00 **Lunch**
- 14:00 -14:15 *Streetwise*, L. Moreno
- 14.15 -14.30 *Identification and presentation of the heritage potential of historic cultural landscapes in the Czech Republic*, E. Zallmannova et al.
- 14:30 - 14:45 *Green Infrastructure challenges in future urban planning*, C. Davies et al.
- 14:45 -15:00 *Planning green infrastructure solutions for smart cities*, B. Scharf
- 15:00 -15:15 *A planning framework to evaluate demands and preferences from different social groups for accessibility to urban greenspaces*, D. La Rosa et al.

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- 15:15 -15:30 *The Green Local Infrastructure (GLI) in the city in crisis. The Spanish cities and the future planning laws after the housing bubble crash of 2009, L. de Castro Caturla*
- 15:30 -15:45 *Sharing Places: Evaluating London's New Cycle-and Pedestrian-friendly Neighborhoods, T. Green Rankin*
- 15:45 -16:00 *Integrated approach for innovative urban green infrastructure design thinking, L. Tolderlund*
- 16:00 -16:30 **Coffee Break**
- 16:30 -17:00 **KEYNOTE: Kathryn Moore, University of Birmingham, World President IFLA, *The idea of landscape: new ways of delivering Infrastructure***
- 17:00 -17:15 *Blue green infrastructures to reinforce cultural promotion of landscapes: a proposal for the Vesuvian coastal area, M. Stanganelli et al.*
- 17:15 -17:30 *Evaluation of University Campuses in terms of Urban Green Area and Green Infrastructure; Black Sea Technical University, Kanuni Campus (Trabzon-Turkey) Example, C. Acar et al.*
- 17:30 -17:45 *Between tree lovers and tree haters - drivers of public perception regarding street trees and its implications on green infrastructure, C. Oliveira Fernandes et al.*
- 17:45 -18:00 *Nature protected areas as a core part of Green Infrastructure in Warsaw – threats and possibilities, M. Wasilewski et al.*
- 18:00 -18:15 *Relationship between green areas and construction buildings in Tirana, Albania, E.Haska et al.*
- 18:15 -18:30 *Establish the green infrastructure and ecosystem-based disaster risk reduction for the restoration efforts following the Kumamoto earthquake, N. Fujita*

SESSION 1 Implications of GI on air quality

Sala dei Quattrocento

CHAIR: Giuseppe Scarascia Mugnozza, Director DIBAF, University of Tuscia

- 11:30-12:00 **KEYNOTE: D. J. Nowak, USDA Forest Service, Founder of i-Tree, *The effects of green infrastructure on air quality***
- 12:00-12:15 *Impacts of green infrastructures on air quality: an experimental and numerical study in Porto's urban area, A. I. Miranda, et al.*
- 12:15-12:30 *Vegetation for roadway air pollution mitigation: selection and implementation for Colorado, USA, C. D. Peltz et al.*
- 12:30-12:45 *Effect of VOC emissions from vegetation on air quality in Berlin during a heatwave, G. Churkina et al.*
- 12:45-13:00 *Carbon dioxide sequestration capability of the Botanical Garden of Rome: environmental and economic benefits, L. Gratani et al.*
- 13:00 -14:00 **Lunch**
- 14:00 -14:15 *Removal of greenhouse gases and pollutants in periurban Mediterranean forest ecosystems described by the Aggregated Interpretation of the Energy balance and water dynamics for Ecosystem services assessment (AIRTREE) model, S. Fares et al.*
- 14:15 -14:30 *Modelling the effectiveness of trees on dispersion of vehicular emissions: a real case application to the Marylebone area in central London, R. Buccolieri et al.*
- 14:30- 14:45 *Green infrastructures and nature-based solutions to improve regulating ecosystem services in metropolitan cities, F. Manes et al.*
- 14:45 -15:00 *Particle accumulation on branches of urban trees measured with biomagnetic monitoring, K. Wuyts et al.*

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- 15:00 -15:15 *Impact of an urban tree crown on the local distribution of atmospheric dust (PM10) inside an urban street canyon in Antwerp, Belgium, J. Hofman et al.*
- 15:15 -15:30 *Ozone removal by urban and periurban forests in Metropolitan city of Rome, L. Fusaro et al.*
- 15:30 -15:45 *Investigation on the effect of nanoparticles on woody species: interaction, uptake and translocation, A. Perone et al.*
- 15:45 -16:00 *Are air quality related ecosystem services of European tree species adequately represented in current models?, R. Gröte et al.*
- 16:00 -16:30 **Coffee Break**
- 16:30 -16:45 *Reducing indoor air pollutants through horticultural biotechnology, PJ. Irga et al.*
- 16:45 -17:00 *How does the amount and composition of PM deposited on Platanus acerifolia leaves change across different cities in Europe?, C. Baldacchini et al.*
- 17:00 -17:15 *Urban and peri-urban vegetation can improve air quality in Mediterranean areas, R. Alonso del Amo et al.*
- 17:15 -17:30 *Assessment of particulates abatement by leaf surface of Polyalthia longifolia with a seasonal approach of an urban area, S. Singh*
- 17:30 -17:45 *Livestock NH3 and PM10 emissions and their mitigation by vegetative environmental buffers in periurban areas, A. Buffoni et al.*
- 17:45 -18:00 *Activities during cost action fp1204 related to air phytoremediation performed in Warsaw, Poland and Stavanger, Norway, S. W. Gawroński et al.*
- 18:00 -18:15 *Atmospheric pollution and urban trees: an integrated approach for green space analysis and management in the industrial city of Terni, G. Sgrigna et al.*
- 18:15 -18:30 *A multi-scale spatially-explicit method to assess the capacity of air pollution removal by urban forests in the city of Florence, Italy, E. Paoletti et al.*

SESSION 11 Assessing and mapping Ecosystem Services generated by urban GI
Sala Esposizione

CHAIR: Christopher Raymond, SLU, Co-Chair Expert WG NBS EKLPISE/EU-DG R&I

- 11:30 -12:00 **KEYNOTE: Nadja Kabisch, Humboldt-Universität, Expert WG NBS EKLPISE/EU-DG R&I, Assessing and mapping ecosystem services generated by urban GI,**
- 12:00 -12:15 *An impact evaluation framework to support the planning and evaluation of nature-based solutions projects: Insights from the EKLIPSE Expert Working Group, C. M. Raymond*
- 12:15 -12:30 *Linking supply and demand factors of urban green infrastructure, T. Hegetschweiler et al.*
- 12:30 -12:45 *Breathing in the Mediterranean Parks: An initiative to assess GI ecosystem disservices in Mediterranean cities, P. Cariñanos et al.*
- 12:45 -13:00 *Multiple approaches for assessing tree canopy cover in Dublin City Centre, Ireland, T. Ningal et al.*
- 13:00 -14:00 **Lunch**
- 14:00 -14:15 *Analyzing urban regulating services from a spatial planning perspective, C. Cortinovis et al.*
- 14:15 -14:30 *A stepwise method for assessing and valuing ecosystem services from urban greenery, Y. Andersson-Sköld et al.*
- 14:30 -14:45 *Cultural ecosystem services provided by brownfield landscapes in the urban green infrastructure: case study Ruhr Metropolis, Germany, A. Tóth et al.*
- 14:45 -15:00 *Mapping and assessing ecosystem services delivery by urban forests: providing the basis for action in urban planning and design, M. Graça et al.*
- 15:00 -15:15 *Ecosystem disservices – when people turn against the trees, J. Östberg*

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- 15:15 -15:30 *Assessing multifunctionality of urban green infrastructure for local planning decisions*, R. Hansen
- 15:30 -15:45 *Assessing Ecosystem Services of Bornova's Green Infrastructure*, C. C. Hepcan et al.
- 15:45 -16:00 *Spatial decisions on ecosystem services*, B. Butcher et al.
- 16:00 -16:30 **Coffee Break**
- 16:30 -16:45 *Towards an integrative approach to evaluate the environmental ecosystem services and disservices provided by urban forests*, R. Samson et al.
- 16:45 -17:00 *The underestimated value of Mexican street trees*, N. M. N. Perez de Leon et al.
- 17:00 -17:15 *Measuring composite ecosystem services potential at the neighbourhood scale*, K. Tzoulas et al.
- 17:15 -17:30 *Using species traits as ecological indicators to quantify ecosystem services in urban green spaces*, C. Branquinho et al.
- 17:30 -17:45 *Assessing the ecological status of urban forests in Parco Nord Milano (Italy) combining lichen and tree response*, S. Munzi et al.
- 17:45 -18:00 *Valuing part of London's urban forest – a comparison of methodologies*, N. Jones et al.
- 18:00 -18:15 *What's in your back yard? Using citizen science to understand the contribution of domestic gardens to urban ecosystem services*, G. Cavan et al.
- 18:15 -18:30 *Estimating ecosystem services of air quality improvement and carbon sequestration by heritage trees in Macau*, A. H. Zhang
- 18:30 -19:30 POSTER SESSION Palazzo dei 7**
- 20.00 Social Dinner, Restaurant Al San Francesco, Via B. Cerretti n.10, Orvieto (FOR REGISTERED PEOPLE ONLY)**

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6 April
Thursday**SESSION 2 GI for water and soil management and remediation****Sala dei Quattrocento****CHAIR: Nikolaos Nikolaidis, Technical University of Crete, Coordinator of H2020-ThinkNature**

- 09:00 –09:30 **KEYNOTE: Kongjian Yu, Dean of Landscape Architecture at PKU, Head of Turenscape,**
Creating deep forms in urban nature
- 09:30 -09:45 *PB distribution within vertical and horizontal mixed vegetation layers growing in a lead contaminated site,* R. Pace et al.
- 09:45 -10:00 *Hydrological and plant functionality of the rain gardens of the Agripolis Campus (north-east Italy),* L. Bortolini et al.
- 10:00 -10:15 *A holistic methodological framework for estimating water retention potential in urban forests,* U. Vilhar
- 10:15 -10:30 *Innovative delivery of flood alleviation through green infrastructure,* C. Tinsley et al.
- 10:30 -10:45 *Creating and Enhancing Green Infrastructure on a Site Level by Rainwater Management,* K. Grimm et al.
- 10:45 -11:00 *Phyto-dehydration of confined sludge: a sustainable approach for the management of polluted ponds,* D. Liberati et al.
- 11:00 -11:30 **Coffee Break**
- 11:30 -11:45 *Analyzing and modeling urban soils' functions and ecosystem services in the New Moscow: consequences of urbanization and perspectives for urban planning,* V.I. Vasenev et al.
- 11:45 -12:00 *Monitoring of soil chemistry at greenstreet sites in New York City,* T. Morin
- 12:00 -12:15 *Innovation in implementation, developing socio-technical tools to ease the implementation of new integrated stormwater management and urban greenspace water supply,* J. Barstad et al.
- 12:15- 12:30 *Poplar tree infrastructures to rehabilitate soils contaminated with polichloroorganics and heavy metals,* L. Passatore et al.
- 12:30 -12:45 *Evaluating the potential of Urban Green Infrastructure to increase resilience to floods: comparative case studies from southern Italy,* R. Pelorosso et al.
- 12:45- 13:00 *Three-dimensional tree: a new method to evaluate interception of rainfall,* M. D. Baptista et al.
- 13:00 -13:15 *Urban Agriculture as a Type of Green Infrastrucure,* A. Paltseva et al.
- 13:15 -13:30 *Creating ecosystem services in stormwater wetland parks: Case studies in Southern Finland,* O. Walroos et al.
- 13:30 -14:30 **Lunch**

SESSION 4 Biodiversity and ecological implications of GI**Sala del Governatore****CHAIR: Giovanni Sanesi, University of Bari**

- 09:00 -09:15 *Biodiversity-based and ecosystem functions-aware spatial prioritization of an Urban Green Infrastructure,* J. Jalkanen et al.
- 09:15 -09:30 *Natural Capital in the City,* J. Keen
- 09:30 -09:45 *Causes, mechanisms, filters and feedbacks: a successional model for predicting vegetation dynamics and community assembly on green roofs over the long term,* C. E. Thuring et al.
- 09:45 -10:00 *Combining biodiversity conservation with ecosystem services provision in Urban Green Infrastructure Planning: the case of Rome,* G. Capotorti et al.

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- 10:00 -10:15 *Studying diversity and heavy metal absorption properties of urban tree species used in environmental pollution control in Yerevan (Armenia)* L. Khachatryan et al.
- 10:15 -10:30 *Impact of de-icing salts in the street greenery of Riga Latvia: a long term perspective from the research*, G. Cekstere et al.
- 10:30 -10:45 *Landscape ecology as theoretical framework for green infrastructures planning*, E. Padoa-Schioppa
- 10:45 -11:00 *Enhancing biodiversity through edible trees stewardship initiatives: Lessons from Berlin*, A. Sheqiri
- 11:00 -11:30 **Coffee Break**
- 11:30 -12:00 **KEYNOTE: Nancy B. Grimm, Arizona State University, A SETS perspective on green infrastructure and its services**
- 12:00 -12:15 *Impact of urban green areas on the biodiversity of butterflies (Insecta: Lepidoptera) in NCT of Delhi, India*, M. Paul et al.
- 12:15 -12:30 *Urban Biodiversity: Much more than protected nature*, G. Montoya et al.
- 12:30- 12:45 *Eau de Paris – Aqueduct revegetation in an urbanized area*, R. Billion-Prunier
- 12:45 -13:00 *Multifunctional Planting Design: towards a healthy and resilient green infrastructure*, C. P. Teixeira et al.
- 13:00- 13:15 *Linking biodiversity and ecosystem functioning of green infrastructures - First attempts and perspectives*, M. Moretti et al.
- 13:15 -13:30 *Biodiversity and quality of cultivated trees in domestic gardens of Hong Kong*, C. Y. Jim
- 13:30 -14:30 **Lunch**

SESSION 6 Engaging communities and partners to participate in the co-production of GI
Sala Etrusca

CHAIR Axel Timpe, University of Aachen

- 09:00 -09:15 *Diversity in access to and benefits from urban green infrastructure*, L. O'Brien et al.
- 09:15 -09:30 *Productive Parks and the co-production of Green Infrastructure*, A. Timpe
- 09:30 -09:45 *Grassroots citizen participation in green infrastructure in NW and Central Europe: the case of Aachen City Region*, I. Whitehead
- 09:45 -10:00 *Implementation of Green Curtain Projects to Spread Sustainable Development in Education Systems and Local Communities*, I. Tucker
- 10:00 -10:15 *Digital breadcrumbs reveal spatial patterns and motives of recreational behaviour in urban forests in Helsinki, Finland*, S. Korpilo et al.
- 10:15 -10:30 *Using art, discussion workshops and social media to enhance biodiversity of parks and gardens in Finland*, N. V. Nygren et al.
- 10:30 -10:45 *Building hydrocitizenship: the participation of communities in green infrastructure planning through creative engagement with water in the landscape*, M. H. Roe et al.
- 10:45 -11:00 *French capital of biodiversity award*, G. Lecuir
- 11:00 -11:30 **Coffee Break**
- 11:30 -12:00 **KEYNOTE: Anna Steidle, Chair WUP Europe, Green Infrastructure - essential for well-being in Cities of tomorrows - what does it need to implement it?**
- 12:00 -12:15 *"Not in their front yard" The opportunities and challenges of introducing urban meadows: a local authority stakeholder perspective*, H. Hoyle et al.
- 12:15 -12:30 *Artificial Intelligence to manage green infrastructure*, A. Spallarossa et al.

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- 12:30- 12:45 *The effect of ground surface permeability on the growth, canopy density and transpiration of urban trees in Gothenburg, Sweden, J. Konarska et al.*
- 12:45 -13:00 *The Green Agenda; a public private partnership approach to the realisation of ecosystem services (ESS) by urban green infrastructure, J. A. Hiemstra et al.*
- 13:00- 13:15 *Introducing the concept of American Urban Field Stations into European cities, V. Gnetti et al.*
- 13:15 -13:30 *Determinants of indoor gardening and choice of public green spaces among Khartoum state's dwellers Case Study of Khartoum State – Sudan, A. Alhuseen*

13:30 -14:30 **Lunch**

14:30 – 18:00 PLENARY SESSION – Sala dei Quattrocento

- 14:30 – 15:30 Roundtable on Successful NBS case studies, **Chair: Chantal Van Ham, IUCN & Victor Beumer, Deltares**
- 15:30 – 15:50 **KEYNOTE: Marta Fernandez, Executive Director of RMIT Europe, EU-NBS Expert Group, Research-Innovation in NBS implementation**
- 15:50 – 17:00 Round Table on Science – Practitioners collaboration on NBS, **Chair: Clive Davies, University of Newcastle**
- 17:00 -17:30 **Coffee Break**
- 17:30 -17:45 Awards for best poster and best presentation
- 17:45- 18:00 Conclusions from the Conference and future perspectives

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Friday

08:00 – 20:00 Field Tour Rome (FOR REGISTERED PEOPLE ONLY)

08.00 Departure from Orvieto, “Campo della Fiera” (Foro Boario) Parking

10.00 Arrival Villa Borghese

12.30 Departure from Villa Borghese

13.30 Arrival in Castelporziano and light lunch

18.00 Departure from Castelporziano

20.00 Arrival in Orvieto